

As a first matter, Applicants acknowledge and thank the Examiner for provisionally allowing claim 6 if rewritten in independent format. Applicants have amended the claim as requested and believe it to be in a form for allowance, which allowance is herein requested.

Applicant will now respond to the Examiner's comments paragraph by paragraph.

1. Applicants acknowledge the Examiner's Final refusal to prosecute the claims of Group II in this application. At the appropriate time, the Applicants will take the necessary steps regarding this refusal.

2. Applicants note the citation to paragraph 35 U.S.C. 102 as support for the Examiner's rejection of claims 1-2, 4-5 and 12.

3. Applicants note the Examiner's rejection.

4. The Examiner now rejects claims 1-2, 4-5 and 12 as allegedly anticipated by Ho, however the Examiner has not established a prima facie case of anticipation.

The Examiner erroneously takes the position that Ho discloses a coating composition comprising a hydroxy group containing film forming polymer, a diol according to the formula $\text{HO-CH}_2\text{-CR(C}_2\text{H}_5\text{)-CH}_2\text{-H}$ (such as BEPD) and a polyisocyanate, which it does not.

The Examiner cites to the clearcoat in Ho (col. 24 lines 26-28) and specifically Example 8 (columns 29-30 and 38). The Examiner erroneously cites to these sections as disclosing a coating composition whereas Ho is actually disclosing the **preparation of a polyurethane dispersion** by reacting a polyol, a polyisocyanate, and 2-butyl-2-ethyl-1,3-propanediol (BEPD). **The polyurethane dispersion is not a coating composition**, and certainly does not anticipate the present invention.

Claim 1 of the present invention is drawn to a coating composition comprising three specified components. Ho merely discloses these components as part of a hydroxyl functional polyurethane dispersion to be used in a coating composition.

The Examiner erroneously cites to Table 5 for support that Ho anticipates the present coating composition. The use of the components in Table 5 is described in Examples 8 and 9 which refer to Example 1 (column 29, lines 1 to 36 and column 30, lines 30 to 40).

In particular, Example 8 shows the preparation of a PUR dispersion using the components listed in Table 5 as well as the curing of the PUR dispersion using the components listed in Table 6 in a similar manner as Example 1.

As known by a skilled man, a resin and its use can be defined in the following steps:

- 1) a resin is prepared from a mixture of reactants (components),

- 2) dispersed in a medium,
- 3) formulated as a coating composition, and
- 4) applied on a substrate.

In general, Ho prepares:

- 1) a hydroxyl functional resin,
- 2) disperses it in a medium,
- 3) formulates a coating composition comprising the hydroxyl functional resin and a polyisocyanate, and
- 4) applies the coating composition on a substrate.

In particular, Ho discloses in Example 8:

- 1) the preparation of a hydroxyl functional polyurethane by reacting the materials listed in Table 5, i.e. polyol I and IV, a polyisocyanate, and 2-butyl-2-ethyl-1,3-propanediol (BEPD),
- 2) disperses the hydroxyl functional polyurethane in water according to Example 1,
- 3) formulates a coating composition (curing formulation) comprising the hydroxyl functional polyurethane dispersion and a polyisocyanate (materials listed in Table 6), and
- 4) applies the coating composition on a polyester release liner according to Example 1.

Conversely, the present invention may be described in the following steps:

- 1) the preparation of a hydroxy group-containing film forming polymer,
- 2) dispersing the hydroxy group-containing film forming polymer in a medium,

- 3) formulating a coating composition comprising the hydroxy group-containing film forming polymer, a diol according to the formula $\text{HO}-\text{CH}_2-\text{CR}(\text{C}_2\text{H}_5)-\text{CH}_2-\text{OH}$, such as BEPD, and a polyisocyanate, [the coating composition according to claim 1] and
- 4) apply this coating composition on a substrate.

The Examiner erroneously alleges that because a diol is used to make the hydroxy functional polyurethane of Ho, and since that resultant polyurethane (dispersed in water) is combined with a polyisocyanate to formulate a coating composition, Ho anticipates the present coating composition comprising a hydroxy group-containing film forming polymer, a diol according to the formula $\text{HO}-\text{CH}_2-\text{CR}(\text{C}_2\text{H}_5)-\text{CH}_2-\text{OH}$, such as BEPD, and a polyisocyanate.

Looking at the disclosure of Ho, in particular Example 8, in the relative step 3(s) described above, it is clear that the Examiner is erroneously trying to compare totally different coating compositions.

Ho discloses **only** a coating composition comprising a hydroxyl functional polyurethane and a polyisocyanate. Claim 1 of the present invention covers a coating composition comprising a hydroxy group-containing film forming polymer, a polyisocyanate, and a diol according to the formula $\text{HO}-\text{CH}_2-\text{CR}(\text{C}_2\text{H}_5)-\text{CH}_2-\text{OH}$, such as BEPD.

The mere fact that a diol is disclosed somewhere in the prior art reference does not create an anticipation. The diol (in conjunction with the other elements) must be

disclosed in such a way as to put one skilled in the art in possession of the invention.

Ho in no way discloses a diol as a component of the coating composition. More particularly, in Ho, Example 8, Table 6, (i.e. step 3 as described above) no diol according to the formula $\text{HO}-\text{CH}_2-\text{CR}(\text{C}_2\text{H}_5)-\text{CH}_2-\text{OH}$ is added.

Accordingly, Ho does not anticipate claim 1 of the present invention.

A **coating composition** comprising the three above-mentioned reactants is not storage stable due to the fact that the functional groups of the reactants are able to react with each other at room temperature. When one looks at the Examples provided in the present patent application, the pot life of such a coating composition is quite short, i.e. 50 minutes (example 1), 115 minutes (example 2) and 85 minutes (example 3). Accordingly, these coating compositions are reacted in a couple of hours.

On the other hand, a **resin** prepared from these three reactants does not have any functional groups left able to react with each other. More particular, hydroxy functional groups are present, but no isocyanate groups are present in the resin itself to react with the hydroxyl groups (see Ho, Example 1, column 29, lines 14 to 16: "The reaction was allowed to run to completion [no residual isocyanate was detected by FTIR]"). Therefore, such a resin is storage stable for a couple of months, if not years.

Thus, the properties of a coating composition comprising the three reactants, such as the storage

stability or pot life, are different from a coating composition comprising the reaction product of these three reactants. Therefore, a skilled man will not be taught by Ho to leave out the preparation of the hydroxyl functional polyurethane dispersion and prepare a coating composition comprising the **unreacted** components instead.

In the present application, in Example 2 and Comparative examples A to F, several coating compositions are prepared with diols. As can be seen from the results in Table 3, it is only with a coating composition according to the present invention comprising a diol according to the general formula in claim 1, i.e. BEPD, that good properties are obtained. It is not disclosed nor suggested in view of Ho that a second compound may be a diol according to the formula $\text{HO}-\text{CH}_2-\text{CR}(\text{C}_2\text{H}_5)-\text{CH}_2-\text{OH}$.

5. Applicants note the Examiner's comments. Applicants do incorporate their arguments as to the inapplicability of Ho to the present invention in this response.

6. Applicants note the Examiner's comments.

7. Applicants note the Examiner's comments and incorporate by reference their response to the previous Office Action herein.

8. The fact that Ho discloses that in its coating composition the hydroxyl functional polyurethane dispersion might be replaced by a hydroxyl functional acrylic dispersion does not change the arguments represented above.

Although it may be suggested by Ho in column 17 and 18 that in Ho's coating composition a second compound Ae) may be present consisting of diols and polyols, the only compound exemplified is a melamine polyol. It is not disclosed nor suggested in view of Ho that the second compound Ae) may be a diol according to the formula HO-CH₂-CR(C₂H₅)-CH₂-OH.

The Examiner has provided no motivation for one skilled in the art looking at Ho, to modify the composition as in the present invention utilizing a diol according to claim 1 and then specifically using for the hydroxy group containing film forming polymer a hydroxy group-containing polyacrylate.

For at least the reasons set forth above, a prima facie showing of obviousness has not been established under the prior art of Ho. The mere fact that the cited references may be modified does not establish a prima facie case of obviousness based on such modification absent a suggestion in the cited art of the desirability of the modification. In re Fritch, 23 USPQ 2d 1780, 1783-1784 (Fed. Cir. 1992)

Obviousness cannot be established merely by locating a reference, which describe various aspects of an invention without also providing evidence of the motivating force, which would impel one skilled in the art to do what the present invention. Applicants submit that it is clear that the applied reference, taken as a whole, fails to provide

such motivating force, and that such force is only provided by the present invention's disclosure.

9. Applicant's note and appreciate the Examiners remarks that claim 6 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The claim 6 has been amended in accordance with the Examiner's request.

11.-12. Applicants note and appreciate the Examiner's comments.

In view of the amendments and remarks herein, the papers submitted previously, the present application is believed to be in condition for allowance, which action is respectfully requested.

Respectfully submitted,

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MARKED UP VERSION OF CLAIM 6

6. (AMENDED) A coating composition comprising a hydroxy group-containing film forming polymer with a hydroxy value between 75 and 300 mg KOH/g solid resin, a polyisocyanate compound, and a diol of the general formula HO-CH₂-CR(C₂H₅)-CH₂-OH, wherein R is an alkyl group having 3-6 carbon atoms
~~and The coating composition according to claim 1, wherein the composition further comprises~~ comprising a polyester or polyurethane having units derived from the diol.

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